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EXAMINER

SCUDERI, PHILIP S

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,443

Applicant(s)

OH, MAN KEON

Examiner

Philip S. Scuderi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) 6 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: S12. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: “24a–42n” in paragraphs 5 and 27 lines 5 and 6 respectively contain reference numbers that are not in the drawings. The examiner suggests “24a–24n”.

Appropriate correction is required.

Claim Objections

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Claims 6 and 22 are objected to because of minor informalities.

Claim 6 line 4 recites the limitation "searches and allocates an idle IP address".

The examiner suggests "searches for and allocates an idle IP address". Appropriate correction is required.

Claim 22 line 5 recites the limitation "the Flag field is set to first value". The examiner suggests "the Flag field is set to a first value". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 4-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 5 recite the limitation "said database" in claim 2 lines 9 and 11 and claim 5 line 2. There is insufficient antecedent basis for this limitation in the claims.

Claim 2 recites the limitation "said IP service network" in line 10. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests "said IP service network unit".

Claim 4 recites the limitation "the call processing control unit" in line 3. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests "the call processing unit".

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Claim 6 recites the limitation "said IP service network" in line 3. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests "said IP service network unit".

Claim 7 recites the limitation "the internet connection system unit" in line 8. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests "the internet connection system".

Claim 8 recites the limitation "the corresponding IP address" in line 3. There is insufficient antecedent basis for this limitation in the claim. The examiner suggests "a corresponding IP address".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6, 9-14, 17, 18, 20, 21, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art admitted in applicant's disclosure (figures 1 and 2, p. 1-3 Background of the Related Art, hereinafter "Related Art") in view of *DHCP FAQ* (John Wobus, "http://www.dhcp-handbook.com/dhcp_faq.html", 10/26/1998, hereinafter "Wobus"), and further in view of Slaughter, III et al. (U.S. 5,598,536, hereinafter "Slaughter").

With respect to claim 1, Related Art discloses an internet protocol (IP) managing apparatus, comprising:

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- a switch unit (fig. 1 #20) that allocates an idle IP address to an internet connection system (fig. 2 #S11); and
- an IP service network unit connected to said switch unit and having at least one router for a LAN-to-LAN connection (fig. 1 #25).

Related Art does not disclose that the switch unit searches for the idle IP address among a plurality of IP addresses. Nonetheless, searching for an idle IP address among a plurality of IP addresses is well known, as evidenced by Wobus. In a similar art, Wobus discloses a method for dynamic allocation of IP addresses comprising searching for an idle IP address among a plurality of IP addresses (inherent in p. 14 "Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients."). Given Wobus's disclosure it would have been obvious to one of ordinary skill in the art to adapt the switch unit to search for an idle IP address among a plurality of IP addresses. The motivation for doing so would have been so that a pool of IP addresses could be shared among a plurality of subscribers (Wobus p. 14 "Ability to define the pool/pools of addresses that can be allocated dynamically.").

Wobus does not expressly disclose that the plurality of IP addresses is stored in a database. Nonetheless, storing IP addresses in a database is well known, as evidenced by Slaughter. In a similar art, Slaughter discloses a database for storing and searching for IP addresses (col. 3 lines 60-62). Given Slaughter's teachings it would have been obvious to one of ordinary skill in the art to store the plurality of IP addresses in a database – obtaining the invention of claim 1. The motivation for doing so would have been to provide efficient IP address search capabilities.

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With respect to claim 6, Related Art discloses an apparatus for managing internet protocol (IP) addresses, comprising:

- an IP service network unit having a router for a LAN-to-LAN connection (fig. 1 #25); and
- a switch unit that connects a subscriber to said IP service network, controls a call inputted from said subscriber (fig. 1 #20), and allocates an idle IP address according to an IP address allocation request from an internet connection system (¶ 6 lines 6-10).

Related Art does not disclose the apparatus comprising:

- allocating an idle IP address comprises searching and allocating an idle IP address in a database; or
- returning a currently used IP address to the database and setting the currently used IP address to be reused, according to an IP return request from said internet connection system.

In a similar art, Wobus discloses searching and allocating an idle IP address according to an IP allocation request (inherent in p. 14 "Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients."). Given the teachings of Wobus it would have been obvious to one of ordinary skill in the art to adapt the allocating of an idle IP address to comprise searching and allocating an idle IP address. The motivation for doing so would have been so that a pool of IP addresses could be shared among a plurality of subscribers (Wobus p. 14 "Ability to define the pool/pools of addresses that can be allocated dynamically.").

Wobus does not expressly disclose searching and allocating an idle IP address in a

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database. Nonetheless, searching and allocating an idle IP addresses in a database is well known, as evidenced by Slaughter. In a similar art, Slaughter discloses a database for searching and allocating IP addresses (col. 3 lines 60-62). Given Slaughter's disclosure it would have been obvious to one of ordinary skill in the art to search and allocate the idle IP address in a database. The motivation for doing so would have been to provide efficient IP address search capabilities. It is inherent in the teachings of Wobus to return a currently used IP address and set the currently used IP address to be reused ("Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients."). Given the further teachings of Wobus it would have been obvious to one of ordinary skill in the art to return a currently used IP address to the database and set the currently used IP address to be reused according to an IP return request from said internet connection system – obtaining the invention of claim 6. The motivation for doing so would have been so that the currently used IP address could be reassigned to another subscriber.

With respect to claims 4 and 9, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 1 and the apparatus for managing IP addresses applied to claim 6. Related Art further discloses a call processing unit (fig. 1 #22). Given the teachings of Related Art in view of Wobus, and further in view of Slaughter applied to claims 1 and 6, it would have been inherent that the database searches for the idle IP address, under control of the call processing unit because otherwise subscribers that connect through different internet connection systems (as disclosed in Related Art fig. 1 #24) would not be able to share the address pool as discussed in the rejection of claims 1 and 6.

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With respect to claim 10, Related Art discloses an IP address managing method, comprising:

- connecting to an internet connection system identified by a destination number (¶ 6 lines 3-6); and
- requesting IP address allocation from the internet connection system.

Related Art does not disclose searching for an idle IP address and transmitting an idle IP address to the internet connection system. In a similar art, Wobus discloses an IP address managing method comprising searching for an idle IP address and transmitting the idle IP address to an internet connection system (inherent in p. 14 “Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients.”). Given the teachings of Wobus it would have been obvious to one of ordinary skill in the art to modify the IP address managing method taught by Related Art by searching for an idle IP address and transmitting the idle IP address to the internet connection system. The motivation for doing so would have been so that the internet connection systems could share a pool of address that could be allocated dynamically (Wobus p. 14 “Ability to define the pool/pools of addresses that can be allocated dynamically.”). In light of the above modification it would have further been obvious for the internet connection system to request IP address allocation from the call processing unit. The motivation for doing so would have been so that all the internet connection systems (as further disclosed by Related Art (fig. 1 #24)) could share the IP address pool. The instant invention does not expressly teach searching for an idle IP address in a database. Nonetheless searching for an idle IP address in a database is well known, as evidenced by Slaughter. In a similar art, Slaughter discloses searching for an

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idle IP address in a database (col. 3 lines 60-62). Given the teachings of Slaughter it would have been obvious to one of ordinary skill in the art to modify the invention taught by Related Art in view of Wobus by storing the IP addresses in a database. Searching for an idle IP address would therefore comprise searching in a database. The motivation for doing so would have been to provide efficient IP address search capabilities.

With respect to claim 11, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 10. Related Art further discloses connecting a subscriber to an IP service network (§ 6 lines 9-10).

With respect to claim 12, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 11. Related Art further discloses requesting a call termination by the subscriber (fig. 2 #S16).

With respect to claim 13, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 12. Related Art further discloses releasing a call from the internet connection system and the IP service network (fig. 2 #S18). The instant invention does not expressly teach sending a call release request to the call processing unit from the internet connection system, however this would be a necessary step in order for the internet connection systems to be able to share the IP address pool as discussed in the rejection of claim 10.

With respect to claim 14, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 13. The instant invention does not expressly teach returning the idle IP address to the database under the control of the call processing unit, however this would be a necessary step in order for the

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internet connection systems to be able to share the IP address pool as discussed in the rejection of claim 10.

With respect to claim 17, Related Art in view of Wobus, and further in view of Slaughter teaches the IP managing method applied to claim 10. It is inherent in the instant invention that an IP address list is managed in the database. It would have been necessary to adapt the call processing unit to initiate the idle IP address search because the idle IP address allocation request is sent to the call processing unit and the call processing unit must identify an idle IP address to allocate in response to the allocation request.

With respect to claim 18, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing method applied to claim 10. Slaughter further discloses an IP management unit (fig. 1 #16) in a call processing unit (fig. 1 #28) having an additional control unit (fig. 1 #16) that searches for an idle IP address in the database (col. 3 lines 60-62). Given the further teachings of Slaughter it would have been obvious to one of ordinary skill in the art to adapt the call processing unit to further comprise an additional control unit that searches for the idle IP address in the database – obtaining the invention of claim 18. This would have created an extra layer of abstraction between the call processing unit and the database. The motivation for doing so would have been to make system maintenance easier to perform.

With respect to claim 20, Related Art discloses an Internet protocol (IP) switching system, comprising a call processor for processing a call from a subscriber and for interconnecting the subscriber with one of a number of internet connection systems, based on call information within the call (§ 6). Related Art does not disclose that the call processor maintains a record of idle IP addresses, which are not allocated, and active IP

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addresses, which are allocated to a number of active calls. Nonetheless, such a dynamic IP address allocation scheme is well known, as evidenced by Wobus. In a similar art, Wobus discloses a method for dynamic IP address allocation which maintains a record of idle IP addresses, which are not allocated, and active IP addresses, which are allocated to a number of active sessions (inherent in p. 14 “Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients.”). Given the teachings of Wobus it would have been obvious to one of ordinary skill in the art to adapt the call processor to maintain a record of idle IP addresses, which are not allocated, and active IP addresses, which are allocated to a number of active calls. The motivation for doing so would have been to provide the ability to define a pool of addresses that can be allocated dynamically (Wobus p. 14 “Ability to define the pool/pools of addresses that can be allocated dynamically.”). Wobus does not expressly disclose maintaining the record of record of idle IP addresses and active IP addresses in a database. However, such a database that stores management information regarding IP addresses assigned to a switching system is well known, as evidenced by Slaughter. In a similar art, Slaughter discloses a database (fig. 1 #30) that stores management information regarding IP addresses assigned to a switching system (col. 4 lines 2-4). Given the teachings of Slaughter it would have been obvious to one of ordinary skill in the art to adapt the invention taught by Related Art in view of Wobus to store the record of idle IP addresses and active IP addresses in a database – obtaining the invention of claim 20. The motivation for doing so would have been to provide an efficient data store for maintaining the IP address records.

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With respect to claim 21, Related Art in view of Wobus, and further in view of Slaughter teaches the switching system applied to claim 20. Related Art further discloses a number translation unit that translates a number within the call information to an identification of a corresponding internet connection system, of the number of internet connection systems (¶ 6 lines 3-6).

With respect to claim 23, Related Art in view of Wobus, and further in view of Slaughter teaches the switching system applied to claim 20. Wobus further discloses searching for and assigning one of the idle IP addresses (inherent in p. 14 “Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients.”). Given the teachings of Related Art in view of Wobus, and further in view of Slaughter applied to claim 1 and Wobus’ further disclosure, it would have been obvious to one of ordinary skill in the art to adapt the call processor unit to search the database for and assign one of the idle IP addresses to the one internet connection system – obtaining the invention of claim 23. The motivation for doing so would have been to provide the ability to define a pool of addresses that can be allocated dynamically (Wobus p. 14 “Ability to define the pool/pools of addresses that can be allocated dynamically.”) between a plurality of internet connection systems.

With respect to claim 24, Related Art discloses a method of managing internet (IP) address allocation in a switching system comprising allocating an idle IP address to an internet connection system (fig. 2 #S11). Related Art does not disclose that the idle IP address is allocated to the internet connection system when a subscriber requests access to the internet connection system. Nonetheless, such an allocation method is well known,

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as evidenced by Wobus. Wobus further discloses a method for managing IP addresses that allocates an idle IP address to a subscriber when the subscriber requests access to an internet connection system (inherent in p. 14 "Automatic allocation: the server's administrator creates a configuration for the server that includes only IP addresses, which it gives out to clients.", "Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients."). Given the further teachings of Wobus it would have been obvious to one of ordinary skill in the art to adapt the method taught by Related Art to allocate the idle IP address when a subscriber requests access to the internet connection system. The motivation for doing so would have been to provide the ability to define a pool of addresses that can be allocated dynamically (Wobus p. 14 "Ability to define the pool/pools of addresses that can be allocated dynamically."). Wobus further discloses indicating in a record to the allocated IP address that the allocated IP address is active (inherent in p. 14 "Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients."). Wobus does not expressly disclose that the record corresponding to the allocated IP address is stored in a database. Nonetheless, storing IP address records in a database of a switching system is well known, as evidenced by Slaughter. In a similar art, Slaughter discloses a switching system comprising a database (fig. 1 #30) for storing IP address records (col. 4 lines 2-4). Given the teachings of Slaughter it would have been obvious to one of ordinary skill in the art to modify the invention taught by Related Art in view of Wobus by storing the record in a database – obtaining the invention of claim 24. The

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motivation for doing so would have been to provide an efficient data store for maintaining IP address records.

With respect to claim 25, Related Art in view of Wobus, and further in view of Slaughter teaches the method applied to claim 24. Wobus further discloses indicating that an IP address is idle when returned by an internet connection system (inherent in p. 14 “Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients.”). Given the further teachings of Wobus it would have been obvious to one of ordinary skill in the art to indicate in the corresponding database record that the IP address is idle when returned by the internet connection system. The motivation for doing so would have been so that the IP address could be reassigned to another subscriber.

With respect to claims 26 and 27, Related Art in view of Wobus, and further in view of Slaughter teaches the method applied to claim 24. Related Art further discloses identifying one of a number of internet connection systems, based on a number received in call information from the subscriber (§ 6 lines 3-6); and connecting the subscriber and the one internet connection system (§ 6 lines 3-6). It is necessary in the method applied to claim 24 that an IP address request is sent from the one internet connection system to the database because the database stores the address pool. Wobus further discloses searching for an IP address record for each of a number of IP addresses assigned to a switching system, for one of a number of idle IP addresses that is not currently allocated (inherent in p. 14 “Dynamic allocation: like automatic allocation except that the server will track leases and give IP addresses whose lease has expired to other DHCP clients.”). Given the further disclose of Wobus it would have been obvious to one of ordinary skill

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in the art to search the database, which stores an IP address record for each of a number of IP address assigned to the switching system, for one of a number of idle IP addresses that is not currently allocated to the number of internet connection systems. The motivation for doing so would have been to provide the ability to define a pool of addresses that can be allocated dynamically (Wobus p. 14 “Ability to define the pool/pools of addresses that can be allocated dynamically.”).

Claims 2, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Related Art in view of Wobus, further in view of Slaughter, and further in view of Hong et al. (U.S. 6,091,737, hereinafter “Hong”).

With respect to claim 2, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 1. Related Art further discloses said switch unit comprising:

- a call processing unit that determines if a call requires the idle IP address and performs a call process to said internet connection system when a subscriber attempts a call (fig. 1 #22, ¶ 5 lines 1-3);
- a number translating unit connected with said call processing unit that translates a destination number inputted from the subscriber.

As discussed in the rejection of claim 1, the database manages the plurality of IP addresses. Furthermore, given the teachings of Related Art in view of Wobus, and further in view of Slaughter applied to claim 1, it would have been necessary to connect the internet connection system unit to the switch unit, and thus the database as well (the database must be connected to the switch unit in order for the switch unit to be able to

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search the database), so that when a subscriber requests an IP address allocation for connection with said IP service network (as further disclosed by Related Art in ¶ 6 lines 6-10) the switch unit could allocate and idle IP address from the pool of IP addresses as discussed in the rejection of claim 1. Related Art in view of Wobus, and further in view of Slaughter does not expressly teach returning the IP address allocation to said database when the call is released. However, returning an IP address allocation when a call is released is well known, as evidenced by Hong. In a similar art, Hong discloses allocating an IP address to a subscriber and returning the IP address allocation when the subscriber explicitly releases it (col. 15 lines 53-55). Given Hong's teachings it would have been obvious to one of ordinary skill in the art to return the IP address allocation to the database when the call is released – obtaining the invention of claim 2. The motivation for doing so would have been to allow reuse of an address that is no longer needed by the subscriber to which it was assigned (Hong col. 15 lines 55-57).

With respect to claim 5, Related Art in view of Wobus, further in view of Slaughter, and further in view of Hong teaches the IP address managing apparatus applied to claim 2. Slaughter further discloses an IP management unit (fig. 1 #16) in a call processing unit (fig. 1 #28) for managing a plurality of IP addresses in the database (col. 3 lines 60-62). Given the further teachings of Slaughter it would have been obvious to one of ordinary skill in the art to adapt the call processing unit to further comprise an IP management unit for managing the plurality of IP addresses in said database – obtaining the invention of claim 5. This would have created an extra layer of abstraction between the call processing unit and the database. The motivation for doing so would have been to make system maintenance easier to perform.

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With respect to claim 7, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 6. Related Art further discloses said switch comprising:

- a call processing unit that judges if the call requires an IP address to perform a call process to said internet connection system, when a call connection is attempted by said subscriber (¶ 5 lines 1-3); and
- a number translating unit connected to said call processing unit that translates a destination number inputted from said subscriber (¶ 5 lines 3-4).

It would have been necessary to connect the database to the switch unit in order for the switch unit, and thus the call processing unit [that manages IP addresses] as well, so that the switch unit could search and allocate an idle IP address in the database as discussed in the rejection of claim 6. The instant invention teaches that the internet connection system unit connected to said database sends the IP address allocation request to said database. The instant invention does not expressly teach returning the IP address to said database when the call is released. However, returning an IP address allocation request when a session ends is well known, as evidenced by Hong. In a similar art Hong discloses allocating an IP address to a subscriber and returning the IP address allocation when the subscriber explicitly releases it (col. 15 lines 53-55). Given the teachings of Hong it would have been obvious to one of ordinary skill in the art to return the IP address to said database when the call is released – obtaining the invention of claim 7. The motivation for doing so would have been to allow reuse of an address that is no longer needed by the subscriber to which it was assigned (Hong col. 15 lines 55-57).

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Claims 3, 8, 15, 16, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Related Art in view of Wobus, further in view of Slaughter, and further in view of *IP Addresses*

(“<http://web.archive.org/web/20000301015621/http://www.cisco.com/univercd/cc/td/doc/product/atm/12020/2020r21x/planning/appndxa.htm>”, 3/1/2000, hereinafter “Reserved Addresses”).

With respect to claims 3 and 8, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 1 and the apparatus for managing internet (IP) protocol addresses applied to claim 6. In each case it would have been inherent that each record of the database corresponds to one of the plurality of IP addresses and each record comprise fields A, B, C, and D that specifically discriminate the corresponding IP address. It would have been necessary for each record to further comprise a use structure that indicates if the corresponding IP address is being used currently so that the switch unit could search for an idle IP address in the database. The instant inventions do not teach a flag indicating a validity or invalidity of the corresponding IP address. Nonetheless, including such a flag would have been obvious to one of ordinary skill in the art. In a similar art, Reserved Addresses discloses that specific IP addresses are reserved for uses such as experimental use and universal broadcasting (p. 6 section titled “Reserved Addresses”). Given the teachings of Reserved Addresses it would have been obvious to one of ordinary skill in the art to include a flag indicating a validity or invalidity of the corresponding IP address – obtaining the inventions of claims 3 and 8. The motivation for doing so would have been to provide a method for making sure that a reserved IP address is not allocated to the internet connection system.

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With respect to claim 15, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 14. It would have been necessary to reset a use of the idle IP address according to an IP address status, when the idle IP address is returned to the database so that the internet connection systems could share the address pool. The instant invention does not expressly teach a flag of the idle IP address being reset according to an IP address status, when the idle IP address is returned to the database. Nonetheless, including a flag of the idle IP address being reset according to an IP address status, when the idle IP address is returned to the database would have been obvious, as evidenced by Reserved Addresses. In a similar art, Reserved Addresses discloses that specific IP addresses are reserved for uses such as experimental use and universal broadcasting (p. 6 section titled "Reserved Addresses"). Given the teachings of Reserved Addresses it would have been obvious to one of ordinary skill in the art to include a flag of the idle IP address that is reset according to an IP address status, when the idle IP address is returned to the database. The motivation for doing so would have been so that if an invalid IP address was allocated then it would be flagged as invalid so that it would not be allocated to other subscribers in the future.

With respect to claim 16, Related Art in view of Wobus, further in view of Slaughter, and further in view of Reserved Addresses teaches the IP address managing apparatus applied to claim 15. Boolean values of Y/N or Yes/No are very well known in the art. It would have been necessary to set the flag to a value of F and the use to a value of No, when the idle IP address is returned to the database due to a fatal error, and the flag set to a value of T and the use is set to a value of No when the idle IP address is returned for a reason other than the fatal error because the database record corresponding to the IP

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address must stay consistent with the status of the IP address in order for the method to function correctly.

With respect to claim 19, Related Art in view of Wobus, and further in view of Slaughter teaches the IP address managing apparatus applied to claim 10. It would have been necessary to identify the idle IP address by state values of a use of the IP address. In a similar art, Reserved Addresses discloses that specific IP addresses are reserved for uses such as experimental use and universal broadcasting (p. 6 section titled "Reserved Addresses"). Given the teachings of Reserved Addresses it would have been obvious to one of ordinary skill in the art to include a flag indicating whether or not each IP address is reserved. The motivation for doing so would have been so that the search could identify an idle IP address that is available to be allocated (not reserved).

With respect to claim 22, Related Art in view of Wobus, and further in view of Slaughter teaches the switching system applied to claim 20. It would have been necessary to store an IP address record assigned to the switching system and each IP address record contains a Use field and to set the Use field value to true if the corresponding IP address is currently allocated to an active call, and to set the Use field to false if the corresponding IP address is not currently allocated to an active call so that the switching system is able to maintain the record of idle IP addresses and active IP addresses within the database as discussed in the rejection of claim 20. The instant invention does not expressly teach each IP address record containing a Flag field that is set to a first value indicating invalidity of the corresponding IP address if the corresponding IP address is returned to the database due to a fatal error, and the Flag field set to a second value indicating validity of the corresponding IP address if the corresponding IP address is

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returned without the fatal error. In a similar art, Reserved Addresses discloses that specific IP addresses are reserved for uses such as experimental use and universal broadcasting (p. 6 section titled "Reserved Addresses"). Given the teachings of Reserved Addresses it would have been obvious to one of ordinary skill in the art to include the Flag field as discussed above, into the instant invention – obtaining the invention of claim 22. The motivation for doing so would have been so that if an IP address was returned due to a fatal error then the system would have a facility to determine that the IP address is invalid and thus should not be assigned in the future.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Andersen et al. (U.S. 5,974,453)
- Woundy (U.S. 6,009,103)
- Ohno et al. (U.S. 6,219,715)
- Sistanizadeh et al. (U.S. 5,790,548)
- Sistanizadeh et al. (U.S. 6,101,182)
- Hopprich et al. (U.S. 6,792,474)
- Ronen (U.S. 6,026,441)
- Mellquist (U.S. 6,115,545)
- McCann et al. (U.S. 6,052,725)
- Matsune et al. (U.S. 5,548,578)
- Rodwin et al. (U.S. 5,812,819)

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- Campion et al. (U.S. 6,249,813)
- Barrett (U.S. 6,832,321)
- Sitaraman et al. (U.S. 6,427,170)
- Kelly (U.S. Pub. 2001/0055299)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip S. Scuderi whose telephone number is (571) 272-5865. The examiner can normally be reached on Monday-Friday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton B. Burgess can be reached on (703) 305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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